Department of Corrections – Utah State Prison
Performance Contracting for Renewable & Energy Efficiency Projects
2003-2005

The Utah State Prison at Bluffdale includes a complex of over 112 buildings ranging in size from 65,000 square feet down to 96 square feet. The older buildings at the site were constructed in 1951. The complex houses a maximum of 4300 inmates and is managed by the Utah Department of Corrections. With aging buildings, outdated energy-using equipment, rising utility bills, comfort issues, and limited capital improvement funding from the Legislature; the Utah Department of Corrections has chosen to follow the University of Utah's successful energy performance contract approach using an energy service company. This approach is authorized by the Utah Legislature under statute 63-9-67.

With technical and management support from the Utah Energy Office's State Buildings Energy Efficiency Program (SBEEP) and Division of Facilities Construction and Management (DFCM), a Stage I RFP was issued in July 2002. The RFP customized procurement documents supplied by the State of Colorado and the nonprofit Energy Services Coalition (Department of Energy's Rebuild America strategic partners). Nine Energy Service Companies (ESCOs) responded to the Stage I RFP. A Stage II RFP was issued to finalists followed by oral presentations. The selection criteria included: team qualifications, results of a preliminary analysis, the proposed energy conservation measure array, and ESCO pricing structures. In January 2003, Johnson Controls, Inc. (JCI) was chosen for the Prison project.

Under the scope of work, JCI provides engineering analysis and design, installation of energy equipment, and competitive arrangements for project financing. In August 2003, JCI arranged for the Department of Corrections to enter into a Phase I $6.5 million agreement with Citibank for project financing. The energy savings achieved at the Prison will pay off the financing over 19 years. JCI is also assisting the Department of Corrections in securing $132,247 in energy retrofit cash incentives from Utah Power.

Because the Prison is near Point of the Mountain in Salt Lake Valley, the facility is uniquely situated for renewable energy resources including an 185 degree geothermal source below the prison and a better-than-average Utah wind resource (average wind speed over 10 mph). The scope of the technical audits includes an analysis of these renewable options. A 50 meter anemometer was erected in November 2003 to gather wind data and determine viability for installing up to 1.5 megawatt of wind generation in 2005.

Size of Project: 112 buildings – 1.13 million total square feet

Project Cost (Phases 1-3): est. $6.5 – 8.5 million

Proposed Energy Conservation Measures:

Phases I

- Lighting retrofit – modify and upgrade T-8 lamps, ballasts, and motion sensors
- Electrical distribution upgrades
- Geothermal heating - utilize 185 degree geothermal hot water to heat the Oquirrh facility
- Premium efficiency motors and pumps
- VFD installation for pumps and fans
- Controls for night setback and demand limiting
- Low flow water using fixtures
- Install trash pulper and compactor
- Install vending misers
- Energy efficient roof-top units

Phase II

- Expand geothermal system to other buildings
- Solarwall installation for preheat of building makeup air
- Building retrocommissioning
- Pipe Insulation
- Stack economizers – boiler room

Phase III

- Install wind-powered generation (approximately 1.5 MW)

Est. Phase I Annual Savings: $409,832[1] guarantee for the first year

Est. Phase I Annual Energy Cost Savings by Retrofit Class: 40% electrical and 60% gas

Environmental Benefits: NA (to be calculated)

Partners: Department of Corrections, Johnson Controls, Division of Facilities Construction and Management, and the Utah Energy Office State Building Energy Efficiency Program (SBEEP)

Project Awards: NA – Project not complete November 2003

Department of Corrections Contacts:	Greg Peay	801-545-5629
	Doug Wright	801-545-5550

[1] Total first year savings is derived from $94,539 in electricity savings, $140,078 in gas savings, $156,026 in water savings, and $19,188 in waste savings.